acquiring a first x-ray image with a detector while moving said detector in a first direction over a first detector scan range and moving said x-ray tube in a second direction over a first tube scan range, said second direction differing from said first direction, said first x-ray image being acquired based on said scan parameters;

moving said detector and x-ray tube to preparation positions based upon said scan ranges for the next said slice; and

acquiring a second x-ray image with said detector while moving said detector in said second direction over a second detector scan range and moving said x-ray tube in said first direction over a second tube scan range, said second x-ray image being acquired based on said scan parameters.

5.   (Amended)   The method of claim 1, further comprising calculating travel distances and sweep velocities for each of said first and second detector and tube scan ranges based on said scan parameters.

6.   (Amended)   The method of claim 1, further comprising:

displaying said first x-ray image on a monitor before completing said step of acquiring said second x-ray image; and

after acquiring said second x-ray image, displaying said first and second x-ray images simultaneously on the monitor in a multi-image format.

7.   (Amended)   The method of claim 1, further comprising:

saving said first x-ray image in an image storage device; and

displaying said first x-ray image on a monitor in a multi-image format display before completing said step of acquiring said second x-ray image.

10.   (Twice Amended)   A method for displaying digital x-ray images in a multi-image format, said method comprising:

identifying scan parameters designating multiple slices of interest from a patient anatomy;

acquiring a series of images with a digital x-ray detector, each image in said series of images corresponding to a slice of interest;

displaying images simultaneously as each image in said series of images is acquired; and

after acquisition and simultaneous display of said each image in said series of images, halting said acquiring step until reinitiated by an operator.

15. (Amended) The method of claim 10, wherein the acquiring step further comprises:

scanning a patient in a first direction to acquire a first image; and

scanning said patient in a direction opposite to said first direction to acquire a second image, said second image being acquired subsequent to said first image.

16. (Amended) The method of claim 10, wherein the acquiring step further comprises calculating first and second preparation positions located on opposite ends of a scan range over which said series of images of the patient are acquired.

22. (New) The method of claim 1, said calculating step further comprising calculating said preparation positions for each of said x-ray tube and detector, said preparation positions located at each end of said scan ranges and corresponding to a distance traveled, said x-ray tube not exposing said detector to x-rays while moving through said preparation positions.

23. (New) The method of claim 1, said calculating step further comprising:

calculating first and second preparation positions for each of said x-ray tube and detector, said first and second preparation positions being located at opposite ends of said scan ranges and corresponding to a distance traveled by said x-ray tube and detector, said x-ray tube not exposing said detector to x-rays while moving through said preparation positions; and

loading stored x-ray tube angulation data and detector and x-ray tube velocity and travel distances corresponding to a subsequent x-ray image while moving said x-ray tube through said second preparation position.